

WHAT IS CLAIMED IS:

1. A bending moment resistant structure, comprising:

a plurality of supported members, each of the supported members having two ends with at least one of the two ends being joined to a connection element at a joint
5 in a way of moment resistance;

a plurality of supporting members, each of the supporting members having two ends with one of the two ends being joined to the connection element at the joint in a way of moment resistance and another one of the two ends being disposed at a support spot of the respective supported member, which endures moment and
10 generates deformation;

whereby, once the structure is subjected to a load and the supported member endures moment, the supporting member contacts the supported member at the support spot with a situation of the supporting member against the deflection of the supported member such that the supporting member and the supported member
15 occur a respective action exerting to each other with the action to the supporting member resulting in the joint enduring a bending moment and intensifying a bending moment resistance at the joint and the action to the supported member reducing a bending moment of the supported member at the support spot and a bending moment value at the joint becoming uniform.

20 2. The structure as defined in claim 1, wherein the supported member is a hollow member with a cross section selected from a round tube, a square tube, a composite member, an assembled member and a box girder member and the supporting member has a shape corresponding the supported member and is received in the supported member.

25 3. The structure as defined in claim 1 or 2, wherein the supported member is selected from an H shaped steel, I shaped steel or the like with a cross section of two flanges and one web joined to the two flanges and the supporting members are

disposed oppositely at spaces at both sides of the web.

4. The structure as defined in claim 3, wherein a plurality of spots, which are at the supporting member, are supported with the supporting members for two or more deflection directions.

5 5. The structure as defined in claim 1, wherein the supporting member is a hollow member with a cross section selected from a round tube, a square tube, an assembled box girder and the like and the supported member has a shape corresponding the supported member and is received in the supporting member.

10 6. The structure as defined in claim 1, wherein the supporting members is disposed at lateral sides of the supported member.

7. The structure as defined in claim 6, wherein the supported member is selected from an H shaped steel, an I shaped steel, a channel shaped steel, an angle steel, a round tube, a box tube, a composite bar and a welded bar and the supporting member is provided with a corresponding shape.

15 8. The structure as defined in claim 2, 3 or 6, wherein the supporting member is provided with a shape of non-prismatic cross section.

9. The structure as defined in claim 1, wherein an isolator is disposed between the supporting member and the supported member at the support spot and connected to either the supported member or the supporting member.

20 10. The structure as defined in claim 9, wherein material of the isolator is selected from rigid material such as steel plate, stone piece or the like.

11. The structure as defined in claim 9, wherein material of the isolator is selected from elastic stuff such as rubber or the like.

12. The structure as defined in claim 9, wherein the isolator is an elastic

component composed of spring.

13. The structure as defined in claims 1 or 9, wherein the supported member contact with the supporting member and no action is in between before the supported member being subjected to a load but the supported member endures a bending moment and occurs displacement and it results in an action between the supported member and the supporting member.

14. The structure as defined in claims 1 or 9, wherein a clearance is between the supported member and the supporting member but the supported member contacts with the supporting member while a load is exerted to the supported member and deflection occurs due to a bending moment being endured by the supported member and then reaction is produced between the supporting member and the supported member.

15. The structure as defined in claims 1 or 9, wherein the supporting member and the supported member at the support spot have an action already in between before the frame being subjected to a load and when the supported member is subjected to a load, the action changes due to enduring a bending moment and occurring deflection.

16. A method for fabricating a structure composed of moment resisting frames and intensifying the frames resisting bending moments, in which each of the frames is comprised of a supported member, a plurality of supporting members and a plurality of connection elements, including following steps:

selecting support spots;
deciding cross sections of the supporting members;
placing an end of each of the supporting members at one of the support spots
25 on a deflection path formed due to the supported member enduring a bending moment and another end of the respective supporting member being joined to one of

the connection elements with a way of moment resistance;

whereby, when the structure is subjected to a load, the supported member generates deflection due to bending moment as to contact with the supporting member such that the supporting member and the supported member generates an action to each other and the action makes the moment of supported member between the support spot and a joint approximately uniform and makes the supporting member enduring a bending moment at the joint of the supporting member and intensify moment resisting capability of the frame at the joint.